

CLAIMS

What is claimed is:

- 5 1. A hinge for a mobile communications terminal comprising a first and a second section, said hinge comprising:
 - a first hinge member defining a first axis of rotation with the first section;
- 10 a second hinge member defining an offset second axis of rotation with the second section; and synchronizing members which transfer rotational movement of the first section relative to the hinge to rotational movement of the second section relative to the hinge.
- 15 2. A hinge as in claim 1, wherein the hinge comprises a hinge frame having a generally oval side profile and two parallel pin receiving holes.
- 20 3. A hinge as in claim 2, wherein the hinge frame comprises a recess for receiving the synchronizing members.
- 25 4. A hinge as in claim 1 wherein the synchronizing members comprise four conical or truncated conical gears connected to each other.
- 30 5. A hinge as in claim 4, wherein the hinge comprises:
 - a first and second hinge pin rotatably mounted in the pin receiving holes, each of the first and second hinge pins having one conical or truncated conical gear connected thereto, and each of the first or second hinge pins being rigidly connected to a respective one of the first and second sections;
 - a third, transverse hinge pin having two conical or truncated conical gears connected thereto and rotatably mounted in connection to the conical or truncated conical gears of the first and second hinge pins so that rotational movement of the first hinge pin is transferred

to the second hinge pin via the conical or truncated conical gears.

6. A hinge as in claim 1, wherein the hinge comprises a hinge lock for locking the position of the 5 second section relative to the first section at an intermediate position between a fully closed position and a 360 degree fully open position.

7. A hinge as in claim 6, wherein the hinge lock comprises planar cut-outs on a partially cylindrical 10 surface arranged between the two conical or truncated conical gears on the third hinge pin, said partial cylindrical surface being arranged in contact with a spring-loaded lock control part.

8. A hinge comprising:
15 a first hinge member defining a first axis of rotation with a first element connected to the hinge;
a second hinge member defining an offset second axis of rotation with a second element connected to the hinge;
and

20 synchronizing members which transfer rotational movement of the first element relative to the hinge to rotational movement of the second element relative to the hinge.

25 synchronizing members.
11. A hinge as in claim 8 wherein the synchronizing members comprises four conical or truncated conical gears connected to each other.

12. A hinge as in claim 11, wherein the hinge comprises
30 a first and second hinge pin rotatably mounted in the pin receiving holes, each of the first and second hinge pin having one conical or truncated conical gear connected thereto, and each of the first or second hinge pin being rigidly connected to a respective one of the first and second elements;

35 a third, transverse hinge pin having two conical or truncated conical gears connected thereto and rotatably

mounted in juxtaposition to the first and second hinge pins so that rotational movement of the first hinge pin is transferred to the second hinge pin via the conical or truncated conical gears.

- 5 13. A hinge as in claim 8, wherein the hinge comprises a hinge lock for locking position of the second section relative to the first section at an intermediate position between a fully closed position and a 360 degree fully open position.
- 10 14. A hinge as in claim 13, wherein the hinge lock comprises planar cut-outs on a partially cylindrical surface arranged between the two conical or truncated conical gears on the third hinge pin, said partial cylindrical surface being arranged in contact with a spring-loaded lock control part.
- 15 15. A hinge as in claim 8, wherein the first and second elements are frame members rigidly attached to a first and second section of a mobile communications device.
- 20 25. A mobile communications device comprising:
 - a housing;
 - a transceiver in the housing;
 - a keypad connected to the housing; and
 - a display connected to the housing;
- 25 wherein the housing comprises a first section movably connected to a second section of the housing by a multi-axis hinge, wherein a first axis of rotation of the hinge is provided at the first section of the housing and a second offset axis of rotation of the hinge is provided at the second section of the housing, and wherein the hinge comprises means for synchronizing rotation of the first and second sections relative to the hinge through a path of about 360 degrees.
- 30 26. A mobile communications device as in claim 25 wherein the first and second sections comprise a first position with the keypad and display being closed by the first and second sections, a second position with the
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second section rotated about 180 degrees relative to the first section such that the first section is substantially inline with the second section and a hinge frame of the hinge, and a third position with the second 5 section rotated about 360 degrees relative to the first section and having the keypad and display located on opposite exterior facing sides of the mobile communications device.

27. A mobile communications device as in claim 25 10 wherein the hinge comprises a hinge frame having a general oval side profile and two parallel pin receiving holes.

28. A mobile communications device as in claim 27 wherein the means for synchronizing rotation of the first 15 and second sections relative to the hinge comprises gears connected to each other.

29. A mobile communications device as in claim 25 wherein the means for synchronizing the rotation of the first and second sections relative to the hinge comprises 20 four conical or truncated conical gears connected to each other.

30. A mobile communications device as in claim 29, wherein the hinge comprises

a first and second hinge pin rotatably mounted in 25 the pin receiving holes, each of the first and second hinge pin having one conical or truncated conical gear connected thereto, and each of the first or second hinge pin being rigidly connected to a respective one of the first and second sections;

30 a third, transverse hinge pin having two conical or truncated conical gears connected thereto and rotatably mounted in juxtaposition to the first and second hinge pins so that rotational motion of the first hinge pin is transferred to the second hinge pin via the conical or 35 truncated conical gears.

31. A mobile communications device as in claim 25 further comprising a flex circuit extending across the

hinge and electrically connecting electronic circuitry in the first section to electronic circuitry in the second section.

32. A mobile communications device as in claim 25

5 wherein the connection comprises a detent locating system for locking position of the second section relative to the first section at an intermediate position between a fully closed position and a 360 degree fully open position.

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